

Pre-Calculus 30  
Logarithm Worksheet

1. Evaluate each expression.

a)  $\log_8 64$

e)  $\log_7 1$

b)  $\log 1000$

f)  $\log_4 2$

c)  $\log_2 8$

g)  $\log 0.01$

d)  $\log_3 81$

h)  $\log_4 \sqrt[5]{64}$

2. Express in logarithmic form.

a)  $3^5 = 243$

c)  $2^{-2} = 0.25$

b)  $16^{\frac{1}{4}} = 2$

d)  $5^{2m} = n + 4$

**3.** Express in exponential form.

a)  $\log_4 64 = 3$

c)  $\log 10\,000 = 4$

b)  $\log_4 8 = \frac{3}{2}$

d)  $\log_6(x - 2) = y$

**4.** Determine the value of  $x$ .

a)  $\log_4 x = 2$

c)  $\log_x 81 = 4$

b)  $\log_5 x = -1$

d)  $\log_4 x = \frac{3}{2}$